

DHCPv6 Configuration Commands

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Chapter 1 DHCPv6 Configuration Commands

1.1 DHCPv6 client Configuration Commands

1.1.1 ipv6 dhcp client pd

Syntax

To enable the prefix client request, run the following command:

ipv6 dhcp client pd *prefix_name*

To disable prefix client request, run the following command:

no ipv6 dhcp client pd *prefix_name*

Parameters

Parameters	Description
<i>prefix_name</i>	The prefix name after obtaining a prefix

Default Value

DHCPv6 prefix client request is not enabled on the interface.

Command Mode

vlan interface configuration mode

Usage Guidelines

The command “ipv6 dhcp client pd *prefix_name*” enables the router to obtain the client prefix through DHCPv6 protocol and save the name “*prefix_name*” in the prefix pool. Once the prefix is obtained, other commands (for instance, ipv6 address) can be applied to use the prefix in the prefix pool.

The function of client, relay, server of DHCPv6 are mutually exclusive on an interface, in other words, one interface can only configure with one mode.

Example

The following example shows how to finish the prefix agent process and save the prefix name “dhcp_prefix” to the router table “general-prefix”:

```
Switch_config# inter vlan 1
```

```
Switch_config_v1# ipv6 dhcp client pd prefix_name
```

Related Command

show ipv6 general-prefix
show ipv6 dhcp interface

1.1.2 ipv6 dhcp client pd hint

Syntax

To configure the prefix the client want to obtain, run the following command:

ipv6 dhcp client pd hint *prefix*

To return to the default setting, use the no form of this command.

no ipv6 dhcp client pd hint *prefix*

Parameters

Parameters	Description
<i>prefix</i>	IPv6 prefix

Default Value

No prefix is configured.

Command Mode

vlan interface configuration mode

Usage Guidelines

The command “ipv6 dhcp client pd hint” can be used to configure the prefix the client expect to have. Configure the command repeatedly, if the client expect to obtain multiple prefixes.

The function of client, relay, server of DHCPv6 are mutually exclusive on an interface, in other words, one interface can only configure with one mode.

Example

The following example shows how to configure the prefix 1:1:1:1::/64 (the client expect to have):

```
Switch_config# inter vlan 1  
Switch_config_v1# ipv6 dhcp client pd hint 1:1:1:1::/64
```

Related Command

`show ipv6 dhcp interface`

1.1.3 ipv6 dhcp client stateless

Syntax

To configure the stateless information the client expect to obtain, run the following command. The stateless mode only acquires information such as DNS but not the prefix address.

ipv6 dhcp client stateless

To return to the default setting, use the no form of this command.

no ipv6 dhcp client stateless

Parameters

None

Default Value

None

Command Mode

vlan interface configuration mode

Usage Guidelines

The command is used to configure the stateless information the client expect to obtain. The stateless mode only acquires information such as DNS but not the prefix address.

The function of client, relay, server of DHCPv6 are mutually exclusive on an interface, in other words, one interface can only configure with one mode.

Example

The following example shows how to configure the stateless information the client expect to obtain:

```
Switch_config# inter vlan 1  
Switch_config_v1# ipv6 dhcp client stateless
```

Related Command

show ipv6 dhcp interface

1.1.4 ipv6 dhcp client rapid-commit

Syntax

To finish the prefix agent process by one-time interaction through DHCPv6 server and save the prefix name "dhcp_prefix" to the general-prefix table, run the following command:

ipv6 dhcp client rapid-commit

To return to the default setting, use the no form of this command.

no ipv6 dhcp client rapid-commit

Parameters

None

Default Value

No prefix is configured.

Command Mode

VLAN interface configuration mode

Usage Guidelines

The key word "rapid-commit" enables the device to finish the prefix agent process by one-time interaction (two information items). If rapid-commit is configured, the client will include the rapid commit option in SOLICIT information.

The function of client, relay, server of DHCPv6 are mutually exclusive on an interface, in other words, one interface can only configure with one mode.

Example

The following example shows how to fast obtain the address the client expect to have.

```
Switch_config# inter vlan 1  
Switch_config_v1# ipv6 dhcp client pd test  
Switch_config_v1# ipv6 dhcp client rapid-commit
```

Related Command

show ipv6 dhcp interface

1.2 DHCPv6 Relay Configuration Commands

1.2.1 ipv6 dhcp relay destination

Syntax

To enable DHCPv6 relay service on the router and transmit the client packet to the destination address, run the following command:

ipv6 dhcp relay destination *ipv6_address*

To delete a destination address, run the following command:

no ipv6 dhcp relay destination *ipv6_address*

Parameters

Parameters	Description
<i>ipv6_address</i>	Destination IPv6 address of Relay

Default Value

DHCPv6 relay service is not enabled and IPv6 address of Relay is not configured.

Command Mode

VLAN interface configuration mode

Usage Guidelines

The command “ipv6 dhcp relay destination” can be used to configure the destination address of relay. It can be another address of relay agent and also be an address of the server.

If multiple destination addresses are need to configure, run this command repeatedly.

The function of client, relay, server of DHCPv6 are mutually exclusive on an interface, in other words, one interface can only configure with one mode.

Example

The following example shows how to configure the destination address 1:1:1:1::/64 of relay.

```
Switch_config# inter vlan 1
```

```
Switch_config_v1# ipv6 dhcp relay destination 1:1:1:1::1/64
```

Related Command

show ipv6 dhcp interface

1.3 DHCPv6 server Configuration Commands

1.3.1 ipv6 dhcp server

Syntax

To enable DHCPv6 server service on the router, run the following command:

ipv6 dhcp server *poolname* [allow-hint | preference *num*] rapid-commit]*

To return to the default setting, use the no form of this command.

no ipv6 dhcp server *poolname*

Parameters

Parameters	Description
<i>poolname</i>	Name of the DHCPv6 pool
<i>allow-hint</i>	Supports satisfying the expectation of the client in priority.
<i>preference num</i>	Configures the priority of the server. Num is the priority. The value ranges from 0 to 255. The default value is 0.
<i>rapid-commit</i>	Supports fast finishing the DHCPv6 process (one-time interaction). The default value is not supported.

Default Value

DHCPv6 server service is disabled on the interface.

Command Mode

VLAN interface configuration mode

Usage Guidelines

The command “ipv6 dhcp server *poolname*” is used to enable DHCPv6 server. The server uses the parameters of *poolname*.

The function of client, relay, server of DHCPv6 are mutually exclusive on an interface, in other words, one interface can only configure with one mode.

Example

The following example shows how to enable DHCPv6 server and uses parameters in dhcp pool.

```
Switch_config# inter vlan 1
Switch_config_v1# ipv6 dhcp server dhcp pool
```

Related Command

```
show ipv6 dhcp interface
ipv6 dhcp pool
```

1.3.2 ipv6 dhcp pool

Syntax

To configure DHCPv6 pool and enter DHCPv6 pool, run the following command:

```
ipv6 dhcp pool poolname
```

To delete DHCPv6 pool, run the following command:

```
no ipv6 dhcp pool poolname
```

Parameters

Parameters	Description
<i>poolname</i>	Name of the DHCPv6 pool

Default Value

DHCPv6 pool is not configured.

Command Mode

Global configuration mode

Usage Guidelines

After the command is configured, add DHCPv6 pool and enter DHCPv6 pool configuration mode.

After DHCPv6 pool is configured, the command “ipv6 dhcp server” can be used to enable DHCPv6 pool.

Example

The following example shows how to configure DHCPv6 pool and enter DHCPv6 pool configuration mode.

```
Switch_config# ipv6 dhcp pool dhcppool
```

Related Command

```
ipv6 dhcp server  
show ipv6 dhcp pool
```

1.3.3 ipv6 local pool

Syntax

To configure the prefix pool, run the following command.

```
ipv6 local pool poolname prefix/prefix-length assigned-length
```

To return to the default setting, use the no form of this command.

```
no ipv6 local pool poolname
```

Parameters

Parameters	Description
<i>poolname</i>	Name of the prefix pool
<i>prefix</i>	Prefix of the prefix pool, whose format is X:X:X:X.
<i>prefix-length</i>	Length of the prefix <0-128
<i>assigned-length</i>	The prefix length of the user which is assigned to use the pool. The length can not be shorter than prefix-length

Default Value

No prefix pool is configured.

Command Mode

Global Configuration Mode

Usage Guidelines

The name of all prefix pools must be exclusive and cannot be overlapped.

Example

The following example shows how to configure the prefix pool pool1:

```
Switch_config# ipv6 local pool pool1 1:1:1::1/48 64
```

Related Command

prefix-delegation pool
show ipv6 local pool

1.4 DHCPv6 Pool Configuration Commands

1.4.1 dns-server

Syntax

To set DNS IPv6 server address, run the following command:

dns-server *ipv6_address*

To return to the default setting, use the no form of this command.

no dns-server

Parameters

Parameters	Description
<i>ipv6_address</i>	IPv6 address of DNS server

Default Value

After DHCPv6 pool is configured, there is no DNS IPv6 server address by default.

Command Mode

DHCPv6 pool configuration mode

Usage Guidelines

The command can be used repeatedly to configure multiple DNS IPv6 server addresses. It can be run repeatedly.

Example

The following example shows how to configure DNS IPv6 server address of pooltest in DHCPv6 server pool to 2001:0DB8:3000:3000::42:

```
Switch_config# ipv6 dhcp pool pooltest
Switch_config_dhcpv6# dns-server 2001:0DB8:3000:3000::42
```

Related Command

show ipv6 dhcp pool

domain-name**1.4.2 domain-name****Syntax**

To configure DNS IPv6 domain name, run the following command:

domain-name *domain*

To return to the default setting, use the no form of this command.

no domain-name

Parameters

Parameters	Description
<i>domain</i>	DNS domain name

Default Value

After DHCPv6 pool is configured, there is no DNS IPv6 domain name by default.

Command Mode

DHCPv6 pool configuration mode

Usage Guidelines

The command can be used repeatedly to configure multiple DNS IPv6 domain names.

Example

To configure DNS IPv6 domain name in DHCPv6 service pool pooltest, run the following command:

```
Switch_config# ipv6 dhcp pool pooltest
```

```
Switch_config_dhcpv6# domain-name 2001:0DB8:3000:3000::42
```

Related Command

ipv6 dhcp pool
dns-server

1.4.3 prefix-delegation

Syntax

To configure the prefix binding client manually, run the following command

prefix-delegation *ipv6_prefix/prefix_length client_DUID [iaid IAID]*

To return to the default setting, use the no form of this command.

no prefix-delegation *ipv6_prefix/prefix_length client_DUID [iaid IAID]*

Parameters

Parameters	Description
<i>Prefix</i>	Designated prefix
<i>Prefix_length</i>	Prefix length
<i>Client-DUID</i>	Client DUID
<i>IAID</i>	Client IAID

Default Value

After DHCPv6 pool is configured, there is no static binding by default.

Command Mode

DHCPv6 pool configuration mode

Usage Guidelines

The command can be used to bind an IPv6 prefix and a certain client static binding. If there is no IAID is configured, any IA of the client can get the prefix.

Example

The following example shows how to designate the prefix binding client in DHCPv6 service pool:

```
Switch_config# ipv6 dhcp pool pooltest
```

```
Switch_config_dhcpv6# prefix-delegation 2001:0DB8::/64 00e00f262388
```

Related Command

ipv6 local pool

ipv6 dhcp pool

show ipv6 dhcp pool

1.4.4 prefix-delegation pool

Syntax

To designate name of the prefix pool of DHCPv6 pool, run the following command:

prefix-delegation pool *poolname*

To return to the default setting, use the no form of this command.

no prefix-delegation pool

Parameters

Parameters	Description
<i>poolname</i>	Name of the designated prefix pool

Default Value

After DHCPv6 pool is configured, there is no name of the prefix pool.

Command Mode

DHCPv6 pool configuration mode

Usage Guidelines

The command can be used to designate the prefix name of DHCPv6 pool. The prefix pool can be configured by command "IPv6 local pool".

Example

The following example shows how to designate DHCPv6 pool to use localpool prefix pool:

```
Switch_config# ipv6 dhcp pool pooltest
```

```
Switch_config_dhcpv6# prefix-delegation pool localpool
```

Related Command

ipv6 local pool

ipv6 dhcp pool

show ipv6 dhcp pool

1.4.5 non-temporary-address range

Syntax

To designate the address range of DHCPv6 pool, run the following command:

non-temporary-address range *ipv6_address_start* *ipv6_address_end*

To remove the designated address and use if for address distribution.

no non-temporary-address range *ipv6_address_start* *ipv6_address_end*

Parameters

Parameters	Description
<i>ipv6_address_start</i>	Sets the starting address of the designated address range.
<i>ipv6_address_end</i>	Sets the end address of the designated address range.

Default Value

There is no designated address after the DHCPv6 pool is configured.

Command Mode

DHCPv6 pool configuration mode

Usage Guidelines

The command can be used to designate the address range of DHCPv6. The address ranges cannot exceed 2 to 32.

Example

The following example shows how to designate DHCPv6 pool to use the address block:

```
Switch_config# ipv6 dhcp pool pooltest
```

```
Switch_config_dhcpv6# non-temporary-address range 1::1 1::2:1
```

Related Command

show ipv6 dhcp pool

1.4.6 lifetime

Syntax

To designate the expiration time of DHCPv6 pool dynamically distributing the prefix, run the following command.

lifetime *valid-time preferred-time*

To return to the default setting, use the no form of this command.

no lifetime

Parameters

Parameters	Description
<i>Valid-time</i>	Dynamically distributes the valid time of the prefix; unit: min (1-525600)
<i>Preferred-time</i>	The preferred time of dynamically distributing the prefix. Unit: minute (1-525600)

Default Value

Valid-timeDefault Value 43200 (30 days)

Preferred-timeDefault Value 10080 (7 days)

Command Mode

DHCPv6 pool configuration mode

Usage Guidelines

The command can be used to configure the expiration time of DHCPv6 pool dynamically distributing the prefix.

Preferred-time cannot be longer than valid-time。

Example

The following example shows how to configure DHCPv6 pool expiration time:

```
Switch_config# ipv6 dhcp pool pooltest
```

```
Switch_config_dhcpv6# lifetime 300 240
```

Related Command

ipv6 dhcp pool

Show ipv6 dhcp pool

1.5 DHCPv6 debug Configuration Commands

1.5.1 debug ipv6 dhcp

Syntax

To display DHCPv6 debug information, run the following command.

debug ipv6 dhcp [detail]

To return to the default setting, use the no form of this command.

no debug ipv6 dhcp [detail]

Parameters

Parameters	Description
<i>Detail</i>	Displays the detailed debug information.

Default Value

No debug information.

Command Mode

Privileged mode

Usage Guidelines

The command can be used to show DHCPv6 debug information.

Example

The following example shows how to display DHCPv6 debug information:

Switch# **debug ipv6 dhcp**

Related Command

None

1.5.2 debug ipv6 dhcp relay

Syntax

To show DHCPVv6 relay agent debug information, run the following command:

debug ipv6 dhcp relay

To return to the default setting, use the no form of this command.

no debug ipv6 dhcp relay

Parameters

None

Default Value

No debug information

Command Mode

Privileged mode

Usage Guidelines

The command can be used to display the debug information of “DHCPv6 relay agent”.

Example

The following example shows how to enable the debug information of “DHCP relay agent”:

Switch# **debug ipv6 dhcp**

1.6 DHCPv6 Management Configuration Commands

1.6.1 show ipv6 dhcp

Syntax

To show DUID of the device, run the following command:

show ipv6 dhcp

Parameters

None

Default Value

None

Command Mode

Other modes except the user mode

Usage Guidelines

The command can be used to show DUID of DHCPv6. DUID is generated when DHCPv6 service is enabled at first time.

Example

The following example shows how to show DUID of the device.

Switch# **show ipv6 dhcp**

1.6.2 show ipv6 dhcp interface

Syntax

To show the information of DHCPv6 interface, run the following command:

show ipv6 dhcp interface [*interface-type interface-number*]

Parameters

Parameters	Description
<i>interface-type</i> <i>interface-number</i>	Interface type and interface number

Default Value

Information of all DHCPv6 interfaces are displayed.

Command Mode

Other modes except the user mode

Usage Guidelines

The command can be used to show the information of DHCPv6, includes the interface mode (client, server, relay) and relevant configuration information of other modes.

Example

The following example shows the interface information of all DHCPv6 interfaces:

Switch# **show ipv6 dhcp interface**

Related Command

ipv6 dhcp client pd
ipv6 dhcp relay destination
ipv6 dhcp server

1.6.3 show ipv6 dhcp pool

Syntax

To show the information and statistics of DHCPv6 pool, run the following command:

show ipv6 dhcp pool [*poolname*]

Parameters

Parameters	Description
<i>poolname</i>	Shows the name of DHCPv6 pool.

Default Value

Information of all DHCPv6 pool are displayed.

Command Mode

Other modes except the user mode.

Usage Guidelines

The command can be used to show information of DHCPv6 pool, which includes configuration information such as name of DHCPv6 pool, static binding information in DHCPv6 pool, associated prefix pool, DNS server of DHCPv6 pool, and number of lease prefix.

Example

The following example shows statistics information of DHCPv6 pool:

Switch# **show ipv6 dhcp pool**

Related Command

ipv6 dhcp pool

1.6.4 show ipv6 dhcp binding

Syntax

To show all prefix binding information, run the following command:

show ipv6 dhcp binding [*prefix*]

Parameters

Parameters	Description
<i>prefix</i>	Ipv6 prefix of displayed binding information

Default Value

None

Command Mode

Other modes except the user mode

Usage Guidelines

The command can be used to show the binding information of DHCPv6, type, DUID, IAID, prefix and expiration time.

Example

The following example shows all binding information of all DHCPv6:

Switch# **show ipv6 dhcp binding**

The following example shows the prefix 1:1:1:1::/64 binding information of DHCPv6:

Switch# **show ipv6 dhcp binding 1:1:1:1::/64**

Related Command

clear ipv6 dhcp binding

1.6.5 show ipv6 local pool

Syntax

To show the information and statistics of the prefix pool, run the following command:

show ipv6 local pool [*poolname*]

Parameters

Parameters	Description
<i>poolname</i>	Name of the displayed prefix pool

Default Value

None

Command Mode

Other modes except the user mode

Usage Guidelines

The command can be used to show the information of prefix pool, which includes name of the prefix pool, prefix, prefix length, distributed prefix length in the DHCPv6 pool, number of the distributed prefix, number of the distributed prefix and prefix information.

Example

The following example shows statistics of DHCPv6 pool:

Switch# **show ipv6 local pool**

Related Command

show ipv6 local pool

1.6.6 show ipv6 dhcp pd

Syntax

To show the prefix information, run the following command:

show ipv6 dhcp pd

Parameters

None

Default Value

None

Command Mode

Other modes except the user mode.

Usage Guidelines

The command can be used to show the prefix information of DHCPv6 client.

Example

The following example shows the statistics information of DHCPv6 pool:

Switch# **show ipv6 dhcp pd**

Related Command

show ipv6 dhcp stateless

1.6.7 show ipv6 dhcp stateless

Syntax

To show stateless information, run the following command:

show ipv6 dhcp stateless

Parameters

None

Default Value

None

Command Mode

Other modes except the user mode.

Usage Guidelines

The command can be used to show the stateless information acquired by DHCPv6 client.

Example

Switch# **show ipv6 dhcp stateless**

Related Command

show ipv6 dhcp pd

1.6.8 clear ipv6 dhcp binding

Syntax

To delete all prefix binding information, run the following command:

clear ipv6 dhcp binding [*prefix*]

Parameters

Parameters	Description
<i>Prefix</i>	IPv6 prefix of to be deleted binding information

Default Value

None

Command Mode

Privileged mode

Usage Guidelines

The command can be used to bind information.

Example

The following example shows how to delete the binding information of 1:1:1:1::/64:

Switch# **clear ipv6 dhcp binding** 1:1:1:1::/64

The following example shows how to delete all binding information:

Switch# **clear ipv6 dhcp binding** *

Related Command

show ipv6 dhcp bingding

1.6.9 clear ipv6 dhcp client

Syntax

To restart DHCPv6 client, run the following command:

clear ipv6 dhcp client [*interface*]

Parameters

Parameters	Description
<i>interface</i>	Interface needs to restart DHCPv6 client

Default Value

None

Command Mode

Privileged ode

Usage Guidelines

The command can be used to restart the DHCPv6 client.

Example

The following example shows how to restart vlan 1 DHCPv6 client:

Switch# **clear ipv6 dhcp client vlan 1**

Related Command

show ipv6 dhcp pd

show ipv6 dhcp stateless